BaltGaz NEVALUX LUX

INSTANTANEOUS GAS WATER HEATER FOR DOMESTIC USE

BaltGaz NEVALUX-5611

TU 4858-008-26985921-2008
USER' S MANUAL
(TOGETHER WITH THE INSTRUCTIONS ON MOUNTING, TECHNICAL SERVICE AND REPAIR OF THE WATER HEATER)
3275-00.000-01 RE

Dear customer,

Thank you for purchasing our water heater.

When purchasing the appliance please check:

- ***Scope of delivery and water heater's resalable condition;***
- ***Compatibility of pressure and type of gas (NG or LPG) used by you with the type of gas indicated in sections 15 of the following manual and in the table on the appliance's.***

You should also require from the selling organization to fill in the warranty repair coupons.

When purchasing an appliance against a credit, the payment schedule should be drawn up with indication of full due and payable amount. The payment schedule should be signed by the Customer with the date indicated and with print full name.

The present manual contains information about the order of installation of the appliance and rules of its exploitation and technical service, following it will provide long-term failure-free and safe operation of the appliance.

Please get carefully acquainted with this manual and follow its instructions.

Best regards
Armavirsky Plant of Gas Equipment, Ltd.,

Telephone number of the unified technical support Service 8 800 555 40 35
(free call on the territory of Russian Federation, working hours of the service: twenty-four-hour)

Installation of the appliance, instruction of the owner on the appliance's operating principles and rules of exploitation, technical service, failure elimination and repair are effectuated only by a specialized service organization. Checking and cleaning of the exhaust flue, repair of water communications are performed by residential operational services upon request of the appliance's owner.
The responsibility for safe exploitation of the appliance and its maintenance in appropriate condition is on its owner. Non-compliance with the safety measures and installation rules, rules of use and technical service, can cause fire, burn, gas poisoning or poisoning with carbonic oxide (CO).

Armavirsky Plant of Gas Equipment Ltd. Is constantly working on improvement of output products and reserves the right for insertion of necessary changes in the water heater's construction. The following changes might not be displayed in the user's manual.

TABLE OF CONTENTS

1. SAFETY MEASURES INDICATION……
Ошибка! Закладка не определена.
2. DESCRIPTION AND OPERATION OF THE APPLIANCE……..
Ошибка! Закладка не определена.
2.1. Appliance's purpose..... **Ошибка! Закладка не определена.**
2.2. Technical characteristics..... **Ошибка! Закладка не определена.**
2.3. Supply package ..... **Ошибка! Закладка не определена.**
2.4. Overall and connection dimensions of the appliance ..... **Ошибка! Закладка не определена.**
3. USAGE OF THE APPLIANCE
……..**Ошибка! Закладка не определена.**
3.1. Putting the appliance into operation 7
3.2. Regulation of temperature and water consumption.....7
3.3. Switching the appliance off.....8
3.4. Replacing the appliance's power elements 9
3.5. Protection from freezing.....9
3.6. Actions in emergency situations 9
4. APPLIANCE TREATMENT ……..10
4.1. Examination 10
4.2. Treatment.....10
5. RULES OF TRANSPORTATION AND STORAGE
……..**Ошибка! Закладка не определена.**
6. SAFETY MEASURES…… **Ошибка! Закладка не определена.**
7. APPLIANCE INSTALLATION ……..…**Ошибка! Закладка не определена.**
7.1.Place and scheme of installation ..... **Ошибка! Закладка не определена.**
7.2. Mounting the appliance..... **Ошибка! Закладка не определена.**
7.3. Connecting the appliance to the water supply system ..... **Ошибка! Закладка не определена.**
7.4. Connecting the appliance to the gas system..... **Ошибка! Закладка не определена.**
7.5. Connecting the appliance to the LPG cylinder ..... **Ошибка! Закладка не определена.**
7.6. Rules of flexible hoses installation..... **Ошибка! Закладка не определена.**
7.7. Connecting the appliance to the exhaust flue..... **Ошибка! Закладка не определена.**
7.8. Installation of the appliance's power elements ..... **Ошибка! Закладка не определена.**
7.9. Checking the appliance.....16
7.10. Rendering the appliance to another type and pressure of gas..... **Ошибка! Закладка не определена.**
8. CONSTRUCTION AND OPERATION CONTROL OF THE APPLIANCE…… **Ошибка! Закладка не определена.**
8.1. Construction of the appliance «BaltGaz NEVALUX-5611» ..... **Ошибка! Закладка не определена.**
8.2. Operation of the appliance «BaltGaz NEVALUX-5611»..... **Ошибка! Закладка не определена.**
9. POSSIBLE FAILURES AND METHODS OF THEIR ELIMINATION…… 22
10. GENERAL INSTRUCTIONS…….. **Ошибка! Закладка не определена.**
11. HANDING THE APPLIANCE OVER TO THE CUSTOMER…… **Ошибка! Закладка не определена.**
12. TECHNICAL SERVICE
……..**Ошибка! Закладка не определена.**
12.1. Examination ..... **Ошибка! Закладка не определена.**
12.2. Treatment..... **Ошибка! Закладка не определена.**
12.3. Technical service ..... **Ошибка! Закладка не определена.**
13. WORKS ORDER AT THE APPLIANCE'S REPAIR AND COMPONENTS REPLACEMENT……**Ошибка! Закладка не определена.**
13.1. Casing removal. ..... **Ошибка! Закладка не определена.**
13.2. Burner replacement. ..... **Ошибка! Закладка не определена.**
13.3. Heat exchanger replacement..... **Ошибка! Закладка не определена.**
13.4. Water and gas unit replacement..... **Ошибка! Закладка не определена.**
13.5. Water unit replacement..... **Ошибка! Закладка не определена.**
13.6. Replacement of the pipe of cold water supply to the heat exchanger..... **Ошибка! Закладка не определена.**
13.7. Replacement of the pipe ofhot water outlet from the heat exchanger..... **Ошибка! Закладка не определена.**
13.8. Replacement of thermo relay (water overheating sensor)..... **Ошибка! Закладка не определена.**
13.9. Replacement of thermo relay (draught sensor) ..... **Ошибка! Закладка не определена.**
13.10. Replacement of the plug or flame sensor..... **Ошибка! Закладка не определена.**
13.11. Replacement of water temperature sensor..... **Ошибка! Закладка не определена.**

13.12. Replacement of micro switch (water flow sensor) ..... **Ошибка! Закладка не определена.**
13.13. Battery section replacement ..... **Ошибка! Закладка не определена.**
13.14. Replacement of the water and gas unit's electromagnetic valve ..... **Ошибка! Закладка не определена.**
13.15. Replacement of the electronic control block ..... **Ошибка! Закладка не определена.**
ANNEX I. scheme of the appliance with separated components…… 33

1. SAFETY MEASURES INDICATION

1.1. In order to avoid accidents and the appliance's breakdown it is prohibited to:

- Install or put the appliance into operation by yourself;
- Switch the appliance on and regulate it without being acquainted with the present user's manual;
- Close the grid or gap in the bottom part of the door or wall intended for air inlet necessary for gas combustion in the premise where a appliance is installed;
- Use the appliance if there is a lack of draught in the exhaust flue;
- Use the appliance violating the rules stated in this manual, and use the appliance when it is out of order;
- dismantle and repair the appliance by yourself;
- To insert changes into the water heater's construction;
- Leave the working appliance unkept;
- touch the casing in the area of viewing window and in close proximity to it, and also the combustion products output pipe next to the gas removal device as the temperature of these surfaces might esceed 100 ^{o}C;

1.2 In case of possibility of water freezing in the water system of the appliance it is necessary to drain the water out of the appliance.

1.3 In case of detection of the appliance's operation failure it is necessary to address to the special service organization and not to use the appliance until troubleshooting.

1.4 At the appliance's normal operation and when the gas pipeline is in good order there should not be any smell of gas in the premise.

IF YOU FEEL THE SMELL OF GAS**:**

a) Close the gas supply tap, that is located on the gas pipeline next to the appliance;
b) Open the windows and doors in order to ventilate the premise, providing maximum fresh air inlet;
c) Do switch the electric light or any other electric appliances on or off;
d) Do not use open fire (lighters, matches etc.)
e) Do not use the telephone in a gas-polluted premise;
f) Do not smoke;
g) Call the gas facility emergency operation service immediately .

Non-compliance with the above-listed safety measures may lead to poisoning with gas or carbonic oxide (CO) from the incomplete gas combustion products.

The first symptoms of poisoning are: heaviness in the head, strong palpitation, buzzing in the ears, swimming of the head, general weakness. Later nausea, vomiting, scant of breath and disordered motor function may appear. The injured person may lose consciousness.

In order to provide first aid it is necessary to:

1) Bring the injured person into the fresh air;
2) Unclasp clothes that constrain breath;
3) Give household ammonia to smell;
4) To cover warmly, but not letting to fall asleep and call the ambulance.
5) In case if there is no breath you must immediately bring the injured person to a warm premise with fresh air and make resuscitation not stopping it before the doctor arrives.

2. DESCRIPTION AND OPERATION OF THE APPLIANCE

2.1. Appliance's purpose

2.1.1. Instantaneous domestic gas water heater « BaltGaz NEVALUX-5611» hereinafter referred to as "Appliance" is manufactured according to TU 4858-008-26985921-2008 (GOST P 51847-2009) standard and designed for water heating for sanitary purposes (washing the dishes, laundry, bathing) in the apartments and individual residential premises.

2.1.2. The appliance is designed for working on NG in accordance with GOST 5542-87 standard or LPG in accordance with GOST 20448-90 (appliance category in accordance with GOST P 51847-2009 – $II_{2H+3B/P\ standards}$) standard. The company- manufacturer releases the appliances adjusted to the particular types of pressure and gas indicated in the tables on the appliances and in the Acceptance certificate.

2.1.3. The appliance is designed for connecting to the exhaust flue for removal of combustion products out of the premise, it is saturated with a draught stabilizer and draught sensor, have no fan in the tract for removing combustion products and by the air inlet (type of appliance in accordance with GOST P 51847-2009 standard – B_{11BS}).

2.2. Technical characteristics

Table 1. Technical characteristics.

Parameters	Value
2.2.1. Rated heating power, kW	21
2.2.2. Rated heating effect, kW	18
2.2.3. Performance index, %, at least	84
2.2.4. Gas type	NG G20 or LPG G30
2.2.5. Family; gas group	2-nd; H or 3-rd; B/P
2.2.6. Rated gas pressure, kPa (mm w.g.): NG (G20, 2nd family, group H) LPG (G30, 3family, group B/P)	 1,3(130) 2,0(200) 2,9(300)
2.2.7. Rated gas consumption, NG, m^3/hour: LPG, kg/hour:	 2,2 1,66
2.2.8 Specific water consumption D (ΔT=30 °C), l/min	9,2
2.2.9. Maximal water pressure, kPa	1000
2.2.10. Minimal water consumption, l|min	2,5
2.2.11. Minimal water pressure, kPa	15
2.2.12. Water consumption at heating ΔT=40 °C, l/min	7*
2.2.13. Water consumption at heating ΔT=25 °C, l/min	11*
2.2.14. Required rarefaction in the exhaust flue, Pa (mm w.g.), Not less than Not more than	 1,96 (0,2) 29,4 (3,0)
2.2.15. Average temperature of combustion products, °C	150
2.2.16. Mass consumption of combustion products NG/ LPG at rated heating power, g/s	7,4 / 8,0
2.2.14. Appliance's ignition type	electronic
2.2.15 Burner flame modulation	incessant hydraulic
2.2.16. Appliance's overall dimension, mm: Height*width*depth	 565*290*221
2.2.16. Weight of appliance, NET /GROSS, kg, not more than	10,0 / 11,0
2.2.17. Diameter of the nozzles of the main burner, mm: NG 1,3 kPa (130 mm w.g.) NG 2,0 KPa (200 mm w.g.) LPG 2,9 kPa (300 mm w.g.)	 1,28 1,14 0,79
2.2.18. Type and voltage of power elements, V	LR20 1,5 B
2.2.19. Continuous operation with one set of power elements, h	250*
2.2.20. Climate performance according to GOST 15150-69	Boreal Climate 4.2

* Reference parameters for p. 2.2.8; 2.2.12; 2.2.13 – at water pressure at least 250 kPa by the inlet into the operating appliance; for

Table 1. Technical characteristics.

Parameters	Value

p.2.2.19 – when using alkaline power elements with high energy output ratio.

2.3. Supply package

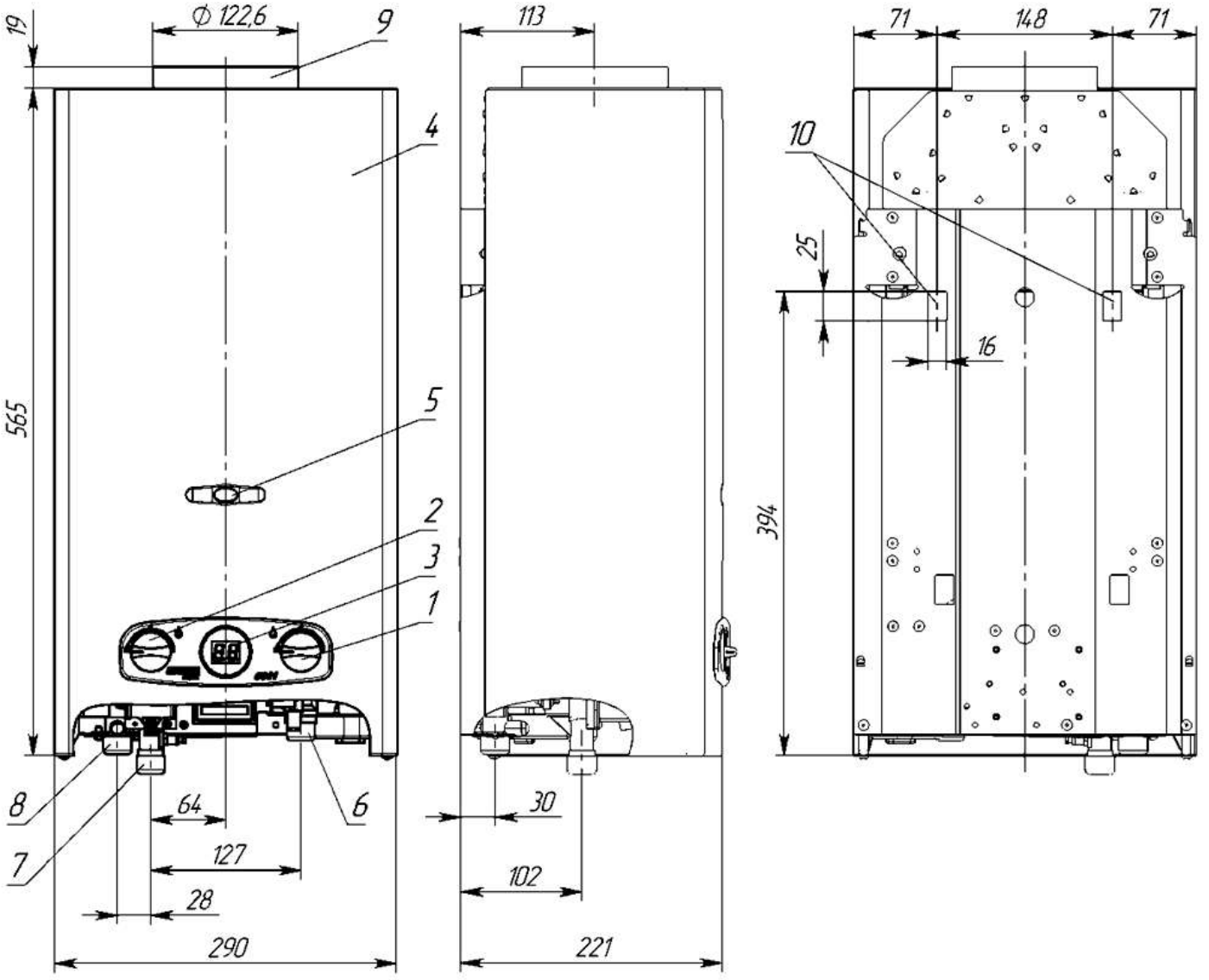
The supply package is presented in the Table 2.

Table 2

Designation	Name	Quantity, pcs.
3275-00.000	Water heater «BaltGaz NEVALUX-5611»	1
3275-00.000-01 RE	User's manual	1
3275-10.000-01	package	1
3208-06.600	Mounting hardware set	1
Spare parts		
3103-00.014	Gasket D19 x d10 x 2	2

Note: *power elements are not included into the delivery set*

2.4. Overall and connection dimensions



1 – knob of water consumption regulation;
2 – knob of gas consumption regulation;
3 – water temperature display;
4 – casing;
5 – viewing window;
6 – fitting of cold water supply, screw thread G1/2;
7 – fitting of gas supply, screw thread G1/2;
8 – fitting of hot water output, screw thread G1/2;
9 – gas removal device flue pipe;
10 – mounting holes.

Scheme 2 Overall and connection dimensions of the appliance

3. USAGE OF THE APPLIANCE

For normal and safe appliance operation the fulfillment of conditions presented in p. 2.2.9, 2.2.11 and 2.2.14 (Table 1) must be provided. Non- compliance with these conditions can cause the appliance's inappropriate or unstable operation or its breakdown. The heating effect indicated in the p. 2.2.2 of Table 1 is provided (with an accuracy ±5%) at rated gas pressure on the inlet into the operating appliance, indicated in the Acceptance certificate.

3.1. Putting the appliance into operation

3.1.1. In order to put the appliance into operation in a general case it is necessary to:

a) Install power elements into the battery section (see p.7.8);
b) Open the stop valve on the gas pipeline by the inlet into the appliance;
c) Open the stop valve of cold water by the inlet into the appliance;
d) Turn the knobs 1 and 2 into the position of minimal water and gas consumption (scheme 5);
e) Open the hot water tap, while spark discharges should appear between the plug and burner (if the water flow going through the appliance will be at least 2.5 l/min), from the spark discharges the burner should ignite and water heating should start.

CAUTION! ***To avoid burns, do not approach your eyes too close to the viewing window while the appliance is being switched on.***

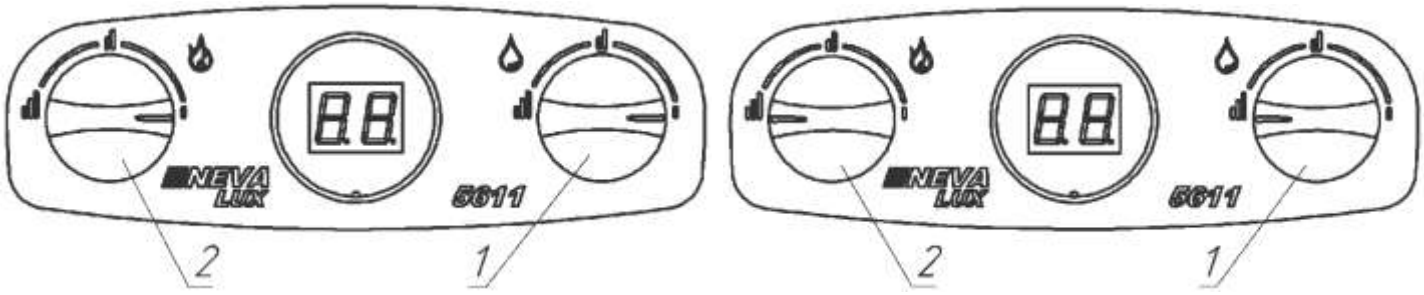
Note: *At first ignition or after long-term period of break in appliance's operating, the burner's ignition will occur only after air removal out of gas pipeline. As the spark discharges last about 7 seconds after switching the water on, it s necessary to close the hot water tap, and then open it again for continuing the ignition. You need to repeat this procedure until complete air removal out of the pipeline and until the burner ignites.*

3.1.2. After switching the appliance on, it is necessary to check the burner's operation visually (see p.4.1.3).

3.2. Regulation of temperature and water consumption

3.2.1. Regulation of water consumption through the appliance is performed by the knob 1 (scheme 4,5): turning the knob to the position **«Minimal consumption»** reduces water consumption, turning the knob to the position **«Maximal consumption»** increases water consumption. At that, in the knob's position «**Minimal consumption»** the appliance's staring up happens at water consumption not less than least 2,5 l/min, in the position **«Maximal consumption»** at water consumption at least 6 l/min. In the intermediate positions of the knob 1 the appliance's starting up happens respectively, in the consumption ranges not less than 2,5…6 l/min.

At low inlet water pressure (at small water consumptions provided by water supply system) for appliance's starting up is recommended to leave the knob 1 in the position «**Minimal consumption»**. In this position it is possible to get a small or average hot water consumption (2,5...5 l/min) at the appliance's outlet. To get more quantity of hot water on the appliance's outlet at normal inlet water pressure (at water consumption 6 l/min and more provided by the water supply system) you should put the knob 1 to the position **«Maximal consumption»**.



a) knobs of water consumption regulation 1 and gas consumption regulation 2 in the position **«Minimal consumption»**

b) knobs of water consumption regulation 1 and gas consumption regulation 2 in the position **«Maximal consumption»**

Scheme 5 Positions of appliance's regulation knobs

Note 1. *At small consumption of water going through the operating appliance, turning the knob 1 to the position «**Maximal consumption**» can cause burner extinction. Burner extinction is also possible when the consumption is reduced by hot water tap or at inlet water pressure drop. In order to make the burner ignite again, it is necessary to turn the knob 1 to the position «**Minimal consumption**» or increase water consumption by the hot water tap.*

3.2.2. Regulation of water temperature at its set flow through the appliance is performed by turning the knob 2 of gas consumption regulation (scheme 4,5): turning the knob to the position **«Maximal consumption»** increases gas consumption and water temperature on the appliance's outlet, turning the knob to the position **«Minimal consumption»** reduces gas consumption and water temperature on the appliance's outlet.

Also it is possible to adjust water temperature on the appliance's outlet by changing water consumption by means of hot water tap or knob 1: water consumption increase leads to its temperature reduction and on the contrary, water consumption reduction leads to its temperature increase.

Note 2. *Water heating temperature is limited by the appliance's heating effect: when water consumption is high, especially in winter time, water at the appliance's outlet might have insufficient temperature even at maximal gas consumption. In this case in order to increase water temperature it is necessary to reduce water flow going through the appliance.*

Water temperature by the inlet into the appliance is shown on the two-digit digital display, installed on the decorative panel on the appliance's casing.

Note 3. *At low water consumption (position of knob 1* ***«Minimal consumption»****) and at high gas consumption (position of knob 2* ***«Maximal consumption»****) water overheating is possible in the heat exchanger, and consequently the burner may be switched off by the automatic control system of appliance. To switch the appliance on again, it is necessary to close the hot water tap, and then open it again. In order to avoid water overheating it is necessary to reduce gas consumption by the knob 2 or to increase water flow through the appliance by means of the knob 1 or hot water tap.*

Water overheating in the heat exchanger causes the appearance of noise during the appliance's operating and causes fast scale deposit appearance in the heat exchanger's pipes and narrowing of their flow sections, what in some time will lead to the appliance's operation efficiency reduction and weakening of hot water jet. So in order to reduce the appliance's output water temperature it is not recommended, especially for hard water, to use a mixing vessel, adding cold water but to use the above listed methods. In order to reduce intensive scale deposit appearance, it is recommended not to allow water heating up to the temperature higher than 60℃ at the appliance's outlet.

3.3. Switching the appliance off

When you finish using the appliance (at night time, not being at home etc.) it is necessary to switch it off, following the following sequence:

a) Close the hot water tap (s);
b) Close the stop gas valve by the appliance's inlet;
c) Close the cold water stop valve by the appliance's inlet.

In case of hard water, in order to reduce scale deposit appearance it is recommended to close the hot water tap after cold water starts coming out of it. If the tap was closed, it is recommended to open it and drain hot water until cold water appears.

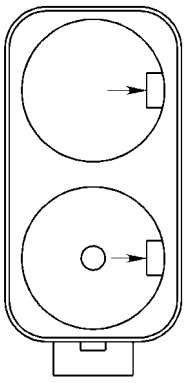
In order to switch the appliance off, it is enough to stop water flow through it, closing all hot water taps, after that it is necessary to make sure that the burner's flame has completely expired.

CAUTION! If after closing all hot water taps the main burner is still on, it is necessary to immediately block gas supply by means of the gas stop valve of the appliance's inlet. Then it is necessary to address to the special service organization for appliance's repair.

3.4. Replacing the appliance's power elements

3.4.1. If power elements are discharged, it is necessary to install new power elements (2 pcs) of typical size D into the battery section 14 (see Scheme 14), in accordance with the electric polarity indicated on the inner side of the section's cover. The indicator of elements discharge can be the lack or significant weakness of the spark discharges between the plug and burner after water starts flowing through the appliance (with water consumption at least 2,5 l/min). For opening the cover of the battery section it is necessary to turn the cover's knob to the position «ON». In order to remove discharged power elements it is necessary to bend the fixing clamps (shown by the arrows on the scheme 6)

It is recommended to install alkaline power elements type LR20 with high output ratio which ensure more durable operation of the appliance. Installation of low-quality power elements or elements with low energy output ratio may lead to their quick discharge or the appliance's loss of function. After installation the power elements it is necessary to close the section's cover and turn the cover's knob to the position «OFF».



Scheme 6. Battery section

3.4.2. The replacement of power elements must be done on the appliance which is switched off.

3.5. Protection from freezing

If after switching the appliance off water freezing in it is possible, it is necessary to drain the water out of it as follows:

a) Close the gas stop valve and cold water stop valve by the appliance's inlet;
b) Open the hot water tap;
c) Turn the water consumption regulating knob into the position "Maximal consumption", turn out the plug 20 (scheme 12, 14) let water leak into a tank and put the plug back up to the stop;
d) Close the hot water tap.

3.6. Actions in emergency situations

In case of emergency situation during the appliance's operation it is necessary to:

a) Close the gas stop valve by the appliance's inlet;
b) Close the cold water stop valve by the appliance's inlet (in case of water leakage);
c) Call a specialized service organization for appliance's repair.

ATTENTION! If the appliance is switched off by the draught sensor (thermo relay 16, scheme 12, 14) it is necessary to close the hot water tap and ventilate the premise. Restarting of the appliance will be possible after the thermo relay cools down (within 1-2 minutes). In case of the appliance's repeated switching off by the draught sensor it is necessary to address to the specialized service organization for gas removal system failure elimination. Disconnecting the draught sensor or its incompetent handling is unacceptable and may lead to sweetdamp poisoning.

4. APPLIANCE TREATMENT

To ensure long-term and failure-free-free operation of the appliance and keep its operating characteristics it is necessary to regularly effectuate its examination, treatment and technical service.

To ensure fire safety it is necessary to carefully and attentively look after the burners' cleanliness, not to allow smoky flame appearance at gas combustion, which leads to soot deposit appearance on the heat exchanger. At that gaps between the heat exchanger's fins acre covered with soot and as a result the flame casts out from the combustion chamber which can lead to fire.

The examination and treatment of the appliance are performed by the owner.

Technical service of the appliance is performed by the specialized service organization not later than 12 months from the date of installation and then not less than once per 12 months.

ATTENTION! Works connected with technical service are not the manufacturer company's warranty liabilities and are effectuated at the customer's cost.

4.1. Examination

4.1.1. Every time before switching the appliance on it is necessary to:

-Make sure that there are no flammable objects next to the appliance;

-Make sure that there is no smell of gas in the premise, in case if the smell of gas is detected, call the gas facilities emergency service.

4.1.2. After the main burner's ignition it is necessary to visually check its operation: the flame should be blue and straight without any yellow smoky edges indicating the contamination of the inner channels of the burners' blades.

The burner blades' inner channels contamination causes incomplete gas combustion and it leads to the following phenomenon:

-Appearance of large amounts of carbon monoxide (sweetdamp) which can cause poising;

-Appearance of large amounts of soot and its deposit on the heat exchanger which worsens heat exchange and can cause the appliance's breakdown.

4.2. Treatment

4.2.1. The appliance should be kept clean, for this it is necessary to regularly remove dust from the upper surface of the appliance, and also to wipe the casing at first with a wet rag, then with a dry one. In case of substantial contamination, it is necessary to wipe the casing at first with a wet rag moistened in a neutral detergent, then with a dry rag.

12.2.2. It is forbidden to use a detergent of heightened effect and containing abrasive particles, gasoline or any other organic solvents to clean the surface of the casing and plastic parts.

ATTENTION! It is allowed to perform all appliance treatment operations only after the appliance is switched off and cooled down.

Technical staff manual

5. RULES OF TRANSPORTATION AND STORAGE

5.1. The appliance must be kept and transported in the package only in the position indicated on the handling marks.

5.2. The appliance should be kept in a closed premise which guarantees protection against atmospheric and other harmful impacts at the air temperature from -50 °C to +40 °C and relative humidity not more than 98%.

5.3. In case of the appliance's storage for more than 12 months it must be subject to conservation in accordance with GOST 9.014 – 78 standard.

5.4. Apertures of the inlet and output fittings should be closed by the gauges or plugs.

5.5. Every 6 months the appliance should go under technical examination, during which the absence of wet entry and dust contamination of unit and parts of heat exchanger are checked.

5.6. The appliances should be put in not more than 8 tiers during collection into stacks and transportation.

6. SAFETY MEASURES

6.1. Mounting of the appliance, putting it into operation and its technical service must be performed only by a specialized service organization. The appliance's mounting should be effectuated in accordance with the project corresponding to the requirements of the Federal and local regulatory acts, governing the installation of the gas-powered equipment.

6.2. Placing the appliance, pipelines, exhaust flues, smoke exhausters and other engineering equipment should provide safety of their operation, ease of technical service and repair.

6.3. Before connecting the appliance it is necessary to do the following:

-Check the compliance of the settings indicated in the Acceptance certificate and in the table on the appliance with the type and pressure of gas available at the place of the appliance's installation. In case of non-compliance it is necessary to effectuate the appliance's rendering to the used type and pressure of gas in accordance with p.7.10 (page 16)

-To make sure that the exhaust flue is correctly mounted and air-tight;

- In order to provide the appliance's correct operation and keep the warranty, it is necessary to follow the requirements of this manual.

7. APPLIANCE INSTALLATION

The appliance must be installed by the specialized service organization.

After the appliance's installation, checking its working capacity and the alliance's owner's instructing by an employee of the organization that installed the appliance, a mark about the appliance's installation should be made in the Certificate of installation, technical service and repair and in the warranty coupons

ATTENTION! Before installing the appliance it is necessary to check the compliance of the settings indicated in the Acceptance certificate and in the table on the appliance with the type and pressure of gas available at the place of the appliance's installation. In case of non-compliance it is necessary to effectuate the appliance's rendering to the used type and pressure of gas in accordance with p.7.10

.

7.1. Place and scheme of installation

7.1.1. Appliance should be installed in the kitchens or any other heated non-residential premises according to the project of gasification and set of rules SP 62.13330.2011.

7.1.2. The volume of the premise where the appliance is installed should be not less than 8 m^3.

7.1.3. The premise where the water heater shall be installed must have good ventilation and constant fresh air inflow (window or opening transom), because while the appliance is on, oxygen combustion occurs. Grids or gap in the bottom part of the door or wall must not be tightly closed

7.1.4. The appliance must be connected to the exhaust flue with a good draught (rarefaction 1, 96…29, 4 Pa) and besides it should be located as close to the exhaust flue as possible. One of the available ways to test the draught in the exhaust flue is presented on the scheme 7.

No draught (the candle flame doesn't' bend) – do not use the appliance	Insufficient draught (the candle flame bends) do not use the appliance	Good draught (the candle flame goes out) -the appliance can be used

Scheme 7. Way of testing draught in the exhaust flue

7.1.5. The appliance must be installed on the fire resistant walls: brick, concrete (with a ceramic plating or without it).

7.1.6. It is acceptable to install the appliance on firehard walls if the wall is insulated with a zinc-coated steel sheet with thickness 0, 8…1 mm along the basalt felt woolen board with thickness 3…5 mm. Insulation of the wall should go over the overall dimensions of the appliance's body frame for at least 100 mm from each side (scheme 8)

The distance from the appliance's lateral surfaces to firehard walls without insulation should be at least 250 mm. If the indicated distance is reduced to 150 mm, it is necessary to install the heat insulation (upholstery of walls by the zinc-coated steel sheet on the sheet of the heat insulation material).

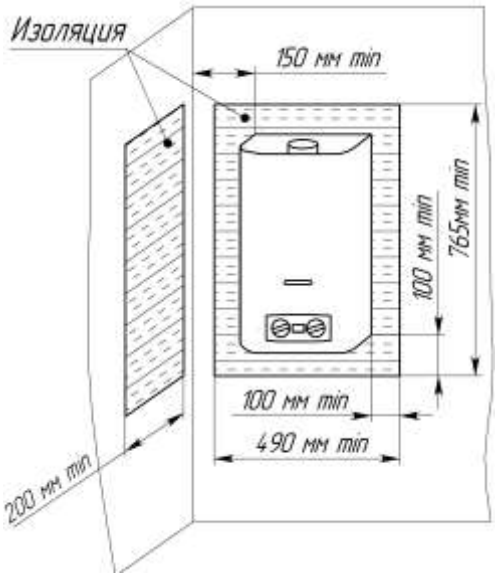
7.1.7. It is forbidden to install the appliance on wooden walls; plastered walls which have wooden base; on walls covered with highly flammable materials.

7.1.8. It is forbidden to install the appliance above a source of heat or open flame.

7.1.9. Place and height of the appliance's installation should meet the requirements of p .7.7 of this manual. Besides it is recommended to install the appliance on the height so that the viewing window will be on the level of consumer's eyes or as close to this level as possible.

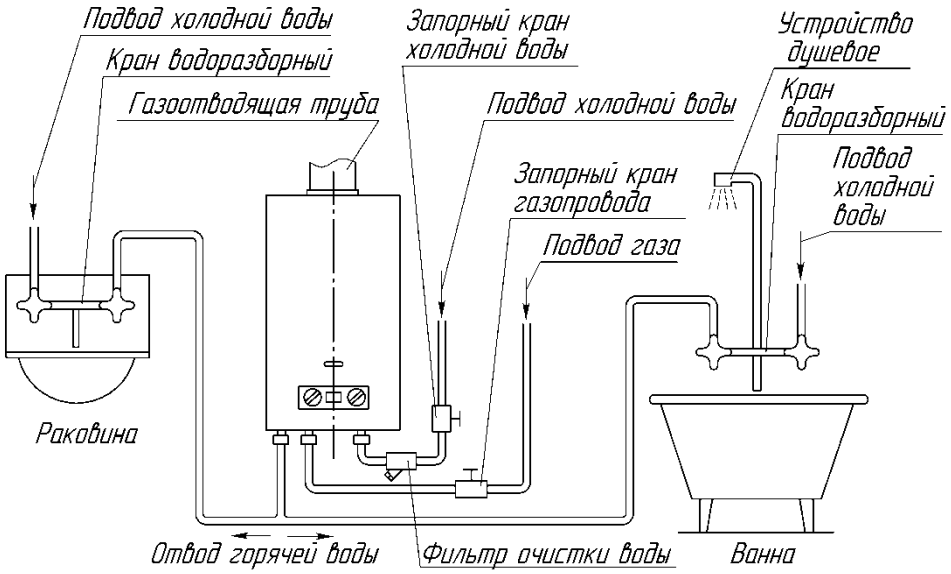
Also for effectuating the technical service at the appliance's installation it is necessary to keep the following spaces:

- The distance from the appliance's lateral surface to the lateral wall must be not less than 150 mm;
- Free space in front of the appliance's front surface should be not less than 600 mm.



Scheme 8. Appliance installation on the firehard walls

7.1.10. Scheme of appliance's installation (connection) is represented on the scheme 9. It is recommended to connect the appliance at first to the water supply system, to fill it with water and then connect it to the gas network.



Scheme9. Scheme of appliance's installation

7.2. Mounting the appliance

7.2.1. Before installing the appliance it is recommended to removing the casing, for this it is necessary to do the following:

a) Remove the knobs 1 and 2 (see Scheme 1,2) by pulling them towards yourself
b) Unscrew the panel fixation screw;
c) Unscrew two screws of casing's fastening in the bottom part of the appliance;
d) Disconnect the cables, connecting the display with the electronic control unit and water temperature sensor
e) Pull the bottom part of the casing towards yourself, move it upwards and remove from the appliance

If the casing or the back wall of the appliance is covered with a protective polyethylene film, it is necessary to remove it before installation. Also it is necessary to remove the stickers with warning notes and advertising information from the front surface of the casing (if there are any)

ATTENTION! Do not allow young children play with packaging material because it can be a danger to them. After installing the appliance the package can be utilized.

7.2.2. The appliance is hanged by the mounting apertures (on the back wall) on two hooks, mounted on the wall (hooks and dowels are included into the supply package). Position and sizes of the mounting apertures, also overall and connecting dimensions for connecting water pipes, gas pipes, and pipes for removal combustion products are presented on the scheme 1, 2.

7.3. Connecting the appliance to the water supply system

7.3.1. In order to increase the appliance's working lifespan and improve its exploitation characteristics is recommended to install a water filter by the appliance's inlet (see scheme 9)

7.3.2. In order to facilitate further technical maintenance it is necessary to install by the appliance's inlet a stop valve on the cold water supply pipeline(scheme 9).The stop valve must be easily accessible.

7.3.3. Connecting appliance to the water supply system should be effectuated with metallic tubes or flexible hoses with inner diameter not less than 13 mm. The length of the flexible hose for water inlet or output should be not more than 2,5 m. Rules of flexible hoses installation are represented in the p. 7.6.

7.3.4. Cold water connection must be effectuated to the fitting of cold water supply 6, and hot water connection - to the fitting of hot water outlet 8 (see scheme 1, 2), having previously removed protective gags from the fittings.

7.3.5. Connection of pipes of hot and cold water should not be accompanied by mutual interference of pipes and parts of the appliance in order to avoid displacement or breakage of separate details and parts of the appliance and disturbance of water system's air-tightness.

7.3.6. Before connecting the appliance to the water supply network it is necessary to open the cold water supply for some time to clean the pipes of water supply to the appliance and prevent unwanted entering of the contamination and sediments at its first starting up.

7.3.7. After connecting the pipelines to the appliance it is necessary to test joints on air-tightness. Air-tightness check is done as follows:

a) Open the hot water tap;
b) Open the cold water stop valve by the appliance's inlet;
c) After filling the appliance's duct with water, close the hot water tap and examine the joints.

Leakage in the joints is unacceptable. It is also recommended to examine the joints of the appliance's water duct, as their air-tightness disturbance is possible in case of the appliance's transportation and storage conditions violation. Tighten the joints if necessary.

Maximal water pressure the appliance is adjusted to (also in case of water thermal expansion) – 1000 kPa.

7.4. Connecting the appliance to the gas system

7.4.1. In order to ensure stable operation of the appliance it is necessary to effectuate the gas line connection with metal pipes or flexible hose with an internal diameter not less than 13 mm. The flexible hose for supplying gas, in accordance with the SP 62.13330.2011 requirements must be resistant to the supplied gas at given temperature and pressure. Flexible hose length should not be more than 2.5 meter, Flexible hoses installation rules are given in p. 7.6. Pipes or a flexible hose should be connected to the fitting 7 (see scheme. 1,2) after removing the protective gag from it.

7.4.2. Installation of pipelines' dismountable joints should be kept to a minimum.

7.4.3. When installing a gas line to the appliance, there should be obligatory a stop valve installed by the appliance's inlet. The stop valve must be easily accessible.

7.4.4. Connecting the gas pipe must not be accompanied by mutual interference of pipes and parts of the appliance in order to avoid displacement or breakage of individual details and parts of the appliance and a violation of the gas line air-tightness.

7.4.5. After connecting the appliance to the gas line, the joints of connection with the pipes should be tested on air-tightness. Air-tightness check in the joints of gas supply is made on non-operating appliance and when the appliance's inlet stop valve is open. Gas leakage is not allowed.

Checking the air-tightness of the gas joints is effectuated by means of soap solution bubble test of the connection points (or other safe methods without using open flame). Appearance of bubbles indicates gas leakage.

7.5. Connecting the appliance to the LPG cylinder

7.5.1. Before connecting the appliance to LPG cylinder make sure that your appliance is adjusted to work with this type of gas. Otherwise it is necessary to render it (see p. 7.10).

7.5.2. The LPG cylinder must be equipped with a reduction unit with vapor phase stabilization pressure 2.9 kPa, and the vapor phase output at least 1 m3/h.

ATTENTION! Usage of reduction units with stabilization pressure different from 2.9 kPa is PROHIBITED.

7.5.3. The length of a flexible hose for connecting the appliance should be not more than 2.5 m and the inner diameter not less than 12 mm. A flexible hose for gas supply should be resistant to the supplied gas at given temperature and pressure. Rules of flexible hoses installation are given in p. 7.6.

7.5.4. A gas stop valve should be installed by the appliance's inlet. It must be easily accessible.

7.5.5. After the mounting termination, it is necessary to check the joints and the entire length of the connecting hose on the subject of gas leakage (see p.7.4.5).

7.5.6. In order to avoid accidents it is **PROHIBITED TO**:

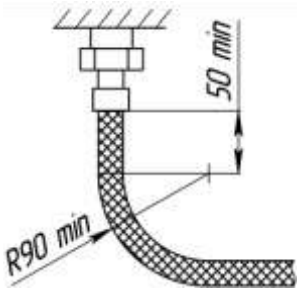
- store gas cylinders and hoses under direct sunlight, next to heat sources (ovens, stoves, radiators and other heating appliances);
- heat the gas cylinders with a flame or heating appliances;
- use damaged gas cylinders.

7.5.7. It is recommended to store gas cylinders in a special metal cabinet to restrict access of children or other unauthorized persons.

7.6. Rules of flexible hoses installation

7.6.1. Flexible hoses applied for the appliance's connection, should be certified for the appropriate use.

Upon their working lifespan termination they should be obligatory replaced.



7.6.2. If the appliance is connected by means of the flexible hoses, it is necessary to take into account the following rules of mounting:

- do not twist the hose relative to the longitudinal axis;
- prevent the hose from bending close to the tips: the length of hose's area next to the scaling-off, which shouldn't be subject to bending shall be not less than 50 mm;
- The hose's bending radius, as measured by the external forming shall be not less than 90 mm.

It is recommended to:

- use angle connections and adapters to avoid hoses fractures next to the tips
- use interval supports when long hoses are mounted;
- At rectilinear arrangement mount the hoses with sagging.

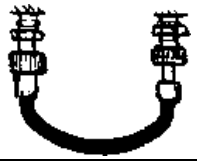
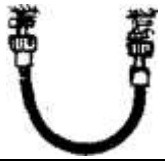
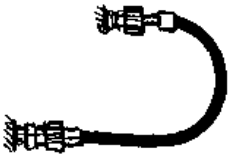
Recommended mounting schemes of the flexible hoses are presented in the table 3.

7.6.3. Mounting a hose is necessary to begin with the non-movable elements of the hose which have a pipe thread (if a counterpart is stationary).

7.6.4. Sealing of the fitting's threaded joint with a counterpart (radial connection) must be made using a Teflon tape sealing material (FCM) or sealant that provides air-tightness of the threaded joint.

7.6.5. The threaded joint of the coupling nut (end connection), for the movable and also non-movable parts with a counterpart fitting must be performed applying gaskets. Gasket material- oil and petrol resistant rubber, asbestos-free paronite and polytetrafluorethylene (Teflon).

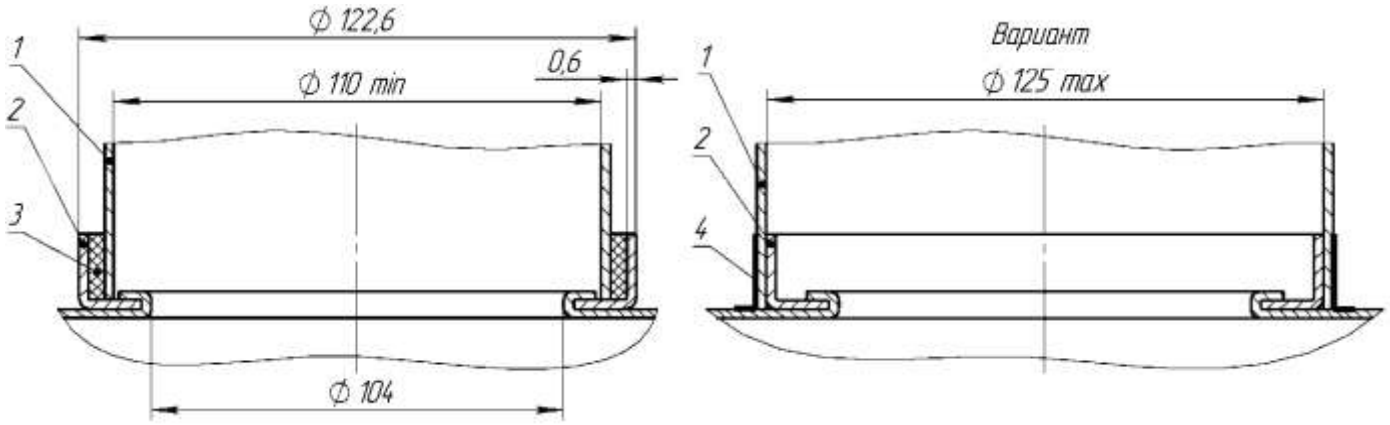
Table 4. Flexible hoses installation scheme

Wrong	Correct
	
	

7.7 Connecting the appliance to the exhaust flue

7.7.1. In order to remove all combustion products and to ensure safe operation of the appliance the following requirements to the exhaust flue and flue pipe, connecting the exhaust flue with the appliance should be fulfilled:

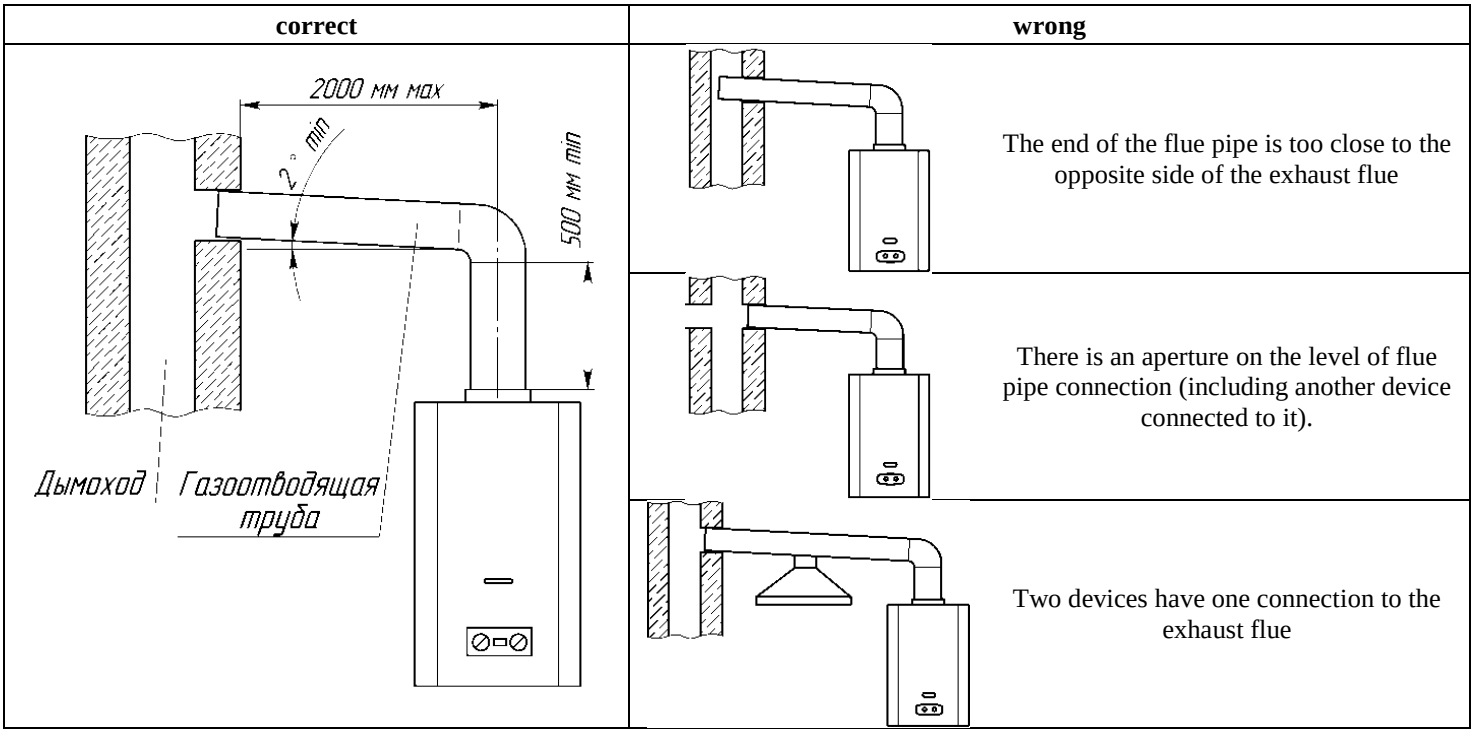
- the exhaust flue should be air-tight and resistant to the heating load and impact of combustion products **It is not allowed to use ventilation channels to remove the combustion products;**
- Draught in the exhaust flue should vary from 1,96 up to 29,40 Pa (see table 1 and scheme 7);
- Flue pipe's material should be corrosion- resistant, nonflammable and sustain durable operation at the temperature up to 200 °C (recommended materials: stainless steel, zinc-plated and enameled steel, aluminum, copper with wall thickness at least 0,5 mm);
- The flue pipe should have an inner diameter not less than 110 mm;
-Length of the vertical part of the flue pipe from the appliance must be at least 500 mm;
-Length of the flue pipe from the vertical part to the exhaust flue must be not more than 2 m;
- The flue pipe should have a slope of not less than 2° up in the direction of the docking place with the exhaust flue and minimal number of turns (not more than three)
- The flue pipe and its connection with the appliance should be air-tight; connecting the pipe with the appliance should be performed in accordance with the scheme 10.



1 – flue pipe;
2 – gas removal device hose;
3 – heat-resistant sealant;
4 – aluminum heat-resistant tape

Scheme 7. Scheme of flue pipe connection

7.7.2. Variant of connecting appliance to the exhaust flue is represented on the scheme 11.


correct
wrong
2000 мм max
2° min
500 мм min
Дымоход
Газоотводящая труба
The end of the flue pipe is too close to the opposite side of the exhaust flue
There is an aperture on the level of flue pipe connection (including another device connected to it).
Two devices have one connection to the exhaust flue

Scheme 11. Connecting the appliance to the exhaust flue

7.8 Installation of the appliance's power elements

Power elements of the typical size D (2 pcs. voltage 1, 5 V) are installed into the battery section 14 (see scheme 14) in accordance with polarity indicated on the inner side of the cover of the section. In order to open the cover of the battery section it is necessary to turn the knob on the cover to the position «ON». It is recommended to install the alkaline power elements of the type LR20, with higher energy output ratio and providing more durable operation of the appliance. After power elements are installed it is necessary to close the section's cover and turn the knob of the cover to the position «OFF».

7.9 Checking the appliance

7.9.1. After installing the appliance and checking it on air-tightness, you should check the main burner's operation (p. 4.1.3), automatic safety devices operation (p. 8.4.7) and water heating temperature. It is necessary to perform the appliance's switching on and off, water temperature regulation in accordance with the section 3. Check of the thermo relay (draught sensor) operation must be effectuated in accordance with the p. 12.3.5.

Note: *After keeping the appliance in the area with sub-zero temperature, it is recommended to perform its first launching not earlier than in 1,5 h after is was brought to a warm premise.*

7.9.2. If necessary (in case of insufficient water heating) the appliance's inlet gas pressure should be checked, for this it is necessary to:

a) Close the appliance's inlet gas tap;
b) Unscrew the screw from the fitting 21 (scheme 14) and connect a differential pressure gauge to the fitting;
c) Open the appliance's inlet gas tap and check the connection of the differential pressure gauge on air-tightness;
d) Switch a appliance on and install a maximal heating power mode;
e) Define pressure with the differential pressure gauge, it must correspond to the pressure indicated in the Acceptance certificate.

After measuring you should:

a) Switch the appliance off and close the appliance's inlet gas tap;
b) Disconnect the differential pressure gauge and screw up the screw in the fitting up to the stop;
c) Open the appliance's inlet gas tap and check the fitting on air-tightness.

7. 10 Rendering the appliance to another type and pressure of gas

7.10.1. Rendering the appliance to another type of pressure or gas must be done by a specialized service organization. For rendering it is necessary to use only a branded set of details.

7.10.2. In order to render the appliance to another type of gas or pressure it is necessary to replace the nozzles of the main burner and the gas valve for similar details, designed for the type and pressure of gas on which the appliance will operate.

Before rendering it is necessary to switch the appliance off and block the gas stop valve.

7.10.3. After rendering it is necessary to test the joints on air-tightness (p. 7.4.5).

7.10.4. The type and pressure of gas to which the appliance was rendered must be indicated in the Acceptance certificate (indicating the organization that effectuated rendering and date), and on the table of the appliance.

8. CONSTRUCTION AND OPERATION CONTROL OF THE APPLIANCE

8.1. Construction of the appliance "BaltGaz NEVALUX 5611"

8.1.1. Wall-mounted appliance « BaltGaz NEVALUX-5611» (scheme 2) has a rectangular form with a detachable casing 4. On the casing's front surface there are: water consumption regulation knob 1, gas consumption regulating knob 2, water temperature display 3 and a viewing window 5 for observing the burner flame. All the main parts of the appliance are mounted on the back wall 22 (scheme 5).

8.1.2. Function of the main units and components of appliance (scheme 14):

- Gas and water unit 4 is designed to control gas supply to the burner, regulating water consumption and consists of water and gas units (the unit's construction ensures gas supply to the burner only if there is water flow);
- The burner 5 is designed to create and supply the gas air mixture to the combustion place;
- Gas removal device 9 is designed to remove the combustion products to the exhaust flue;
- plug 10 is designed to create a spark charge for burner's ignition;
- flame detection sensor 11 ensures control of burner's operation;
- heat exchanger 12 provides transfer of the heat received at gas combustion to the water flowing through its pipes;
- thermo relay 16 (draught sensor) is designed to switch the appliance off in case of no draught in the exhaust flue or if its rarefaction is less than 1,96 Pa. The thermo relay has normally closed contacts with an opening temperature 90 °C;
- water temperature sensor 18 is designed to determine appliance's output water temperature;
- thermo relay 19 (water overheating sensor) is designed to switch the appliance off if water is heated for more than 90 °C;
- Gag 20 is used for draining the water from the appliance's water circuit in order to prevent it from freezing; a safety valve integrated into the gag is designed to protect the appliance's water circuit from high water pressure.

- 8.2 Operation of the appliance "BaltGaz NEVALUX 5611"

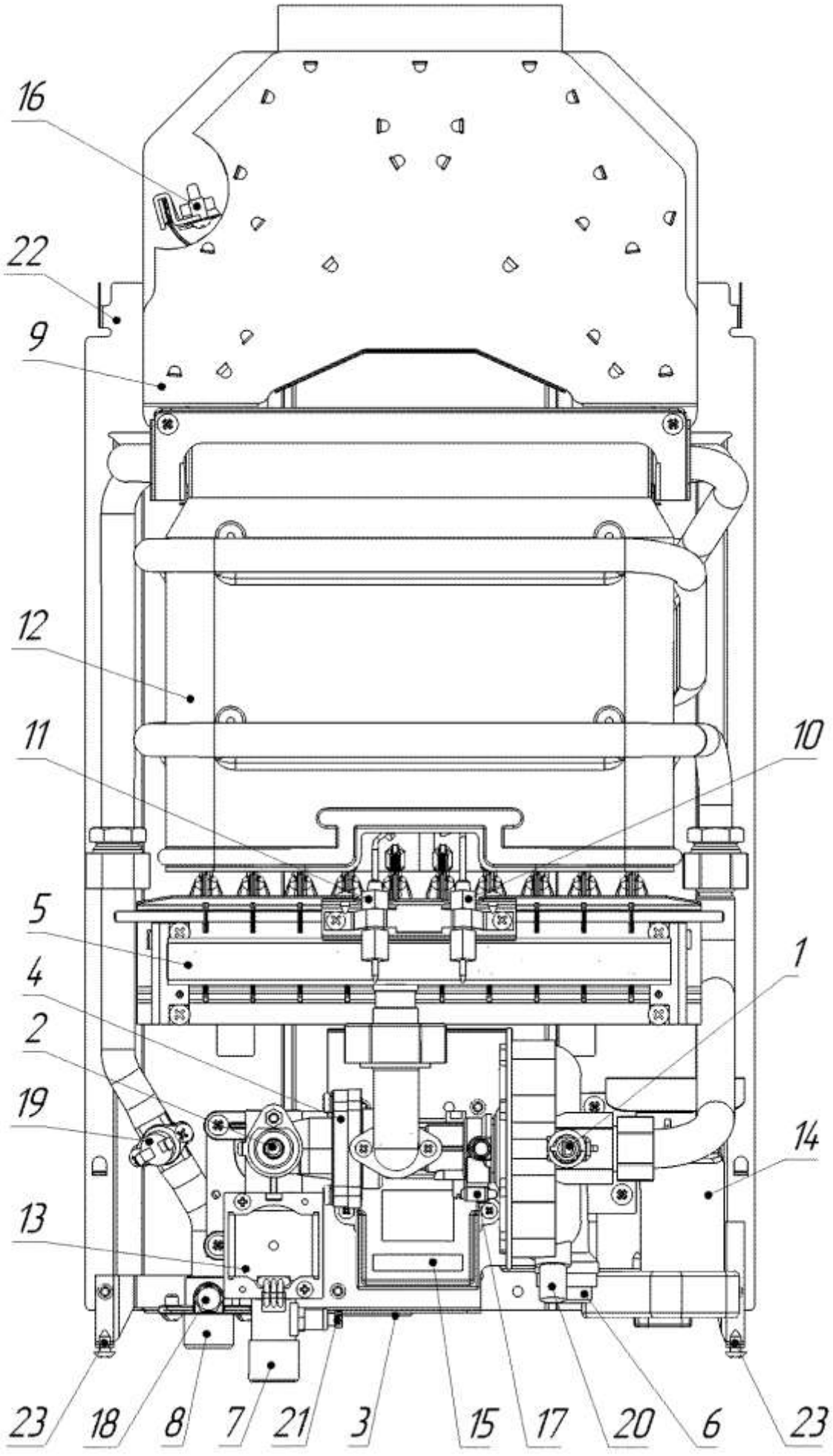
8.2.1.The appliance's flow chart is represented on scheme 15.

8.2.2. When water starts flowing through the water unit 22 with a consumption not less than 2,5 l/min the membrane's rod 25 opens the gas valve 30, and the contacts of the micro switch 17 close, after this the control unit 15 starts to supply current impulses of high voltage to the plug 10 and the electromagnetic valve 13 opens. Ignition of the burner 5 appears from the spark charges between the plug's electrode and burner blade nozzle. Then flame sensor 11 controls the burner's operation.

8.2.3. Water consumption regulator 1 regulates the appliance's output water volume and temperature: turning the regulator counterclockwise increases water consumption and reduces its temperature, turning the regulator clockwise reduces water consumption and increases its temperature. Position of the regulator also defines water consumption when the appliance switches on and off (see p.3.3.1).

8.2.4. Gas consumption regulator 2 regulates the amount of gas supplied to the burner in order to get a required water temperature at its set consumption: turning the regulator counterclockwise increases gas consumption and water temperature; turning the regulator clockwise reduces gas consumption and water temperature.

8.2.5. The water heater's particularity is the presence of a device providing the burner's flame modulation: when water flow through the water unit 22 changes, smooth regulation of gas supply to the burner 5 occurs, the regulation is effectuated because of the presence of two springs of small and higher hardness in the water unit's construction, and of the gas valve, that has a definite profile of the cylindrical part, providing at a small effort of the rod of the membrane 25 smooth opening of the annular space, through which gas comes to the burner.



1 – water consumption regulator;
2 – gas consumption regulator;
12 – heat exchanger;
13 – electromagnetic valve;

3 – table;
4 – gas and water unit;
5 – burner;
6 – cold water supply fitting;
7 – gas supply fitting;
8 – hot water output fitting;
9 – gas removal device;
10 – plug
11 – flame sensor;
14 – battery section
15 – electronic control block;
16 – thermo relay(draught sensor);
17 – micro switch (water flow sensor);
18 – water temperature sensor;
19 – thermo relay (water overheating sensor);
20 – water drain gag;
21 – gas pressure measuring fitting;
22 – back wall.
23- casing fixation screws

Scheme 14. Appearance of the appliance without casing

8.2.6. When water flow stops or when its consumption reduces to a value less than 2,5…6 l/min (depending on the position of water consumption regulator 1) the contacts of the micro switch 17 open and the valves 13 and 30 close. The burner flame goes out.

8.2.7. The appliance is equipped with safety devices that provide:

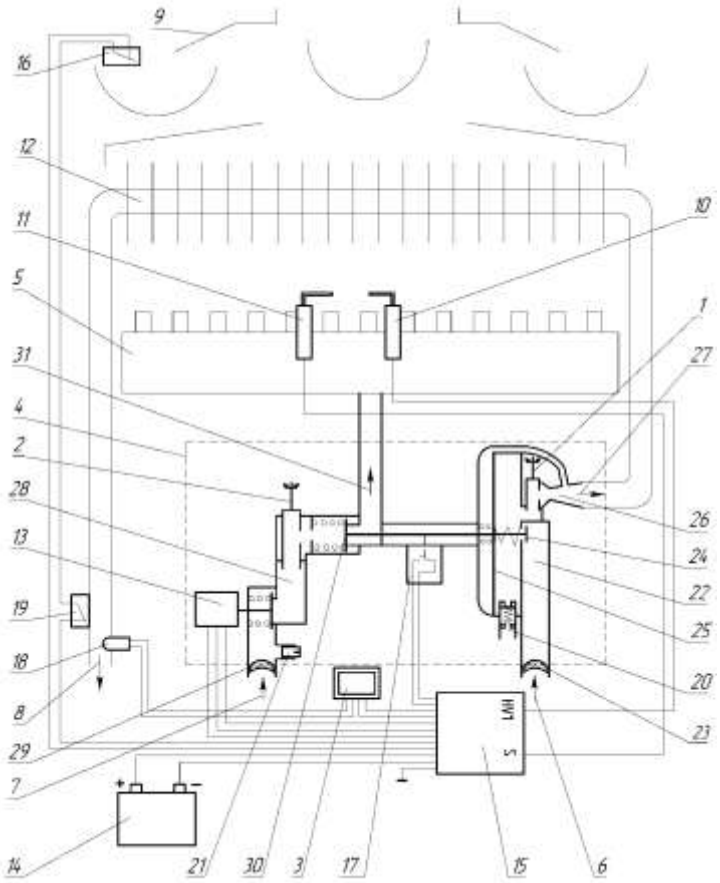
-gas access to the burner only in case if there is water flow;

-stop of gas supply to the burner in case if its flame goes out

-switching the appliance off in case of no draught in the exhaust flue

-switching the appliance off at water heating for more than 90 °C;

- switching the appliance off a electrical power loss



1 – water consumption regulator;
2 – gas consumption regulator;
3 –water temperature display;
4 – gas and water unit;
5 – burner;
6 –cold water inlet;
7 – gas inlet;
8 – hot water output;
9 – gas removal device;
10 – plug;
11 – flame sensor;
12 – heat exchanger;
13 – electromagnetic valve;
14 – battery section;
15 – electronic control unit;
16 – thermo relay (draught sensor);
17 – micro switch;
18 – water temperature sensor;
19 – thermo relay (water overheating sensor);
20 – water drain gag;
21 – gas pressure measuring fitting;
22 – water unit;
23 – water filter;
24 – water consumption restrictor;
25 – membrane;
26 – Venturi fitting;
27 – water outlet to the heat exchanger;
28 – gas unit;
29 – gas filter.
30- gas valve
31- gas outlet to the burner

Scheme 15. Flow chart of the appliance

9. POSSIBLE FAILURES AND METHODS OF THEIR ELIMINATION

Table 6. Possible failures of the appliance "BaltGaz NEVALUX 5611"

Failure	Probable reason	Methods of elimination
The appliance does not switch on when hot water tap is opened, there is no spark discharge.	Power elements are not installed (or wrong installed) in the battery section or they are totally discharged.	Install or replace the power elements in accordance with polarity.*
	Insufficient water consumption for switching the appliance on at the set position of the knob 1 (scheme 2)	Increase water consumption with the hot water tap or move the knob 1 to the position "Minimal consumption" (scheme 5)
	Insufficient water consumption because of incomplete opening of the taps.	Open the stop valve on the appliance's inlet and the hot water tap completely
	Insufficient water consumption (less than 2,5 l/min with completely open taps), caused by the following: Low water pressure in the water supply network Violation of the requirement of this manual at pipelines installation Water filters contamination Scale deposit in the heat exchanger	 Address to the municipal service in order to eliminate the cause of low water pressure Effectuate the pipelines installation in accordance with the requirements of this manual*. Clean or replace the water filters.* Clean the heat exchanger from scale deposit (see p. 12.3.2).*
	Electrical open	Find and eliminate the electrical open.*
	Appearance of soot deposit on the plug's electrode.	Effectuate cleaning of the plug's electrode from soot deposit.*
	The electronic control block, micro switch or water unit membrane is out of order.	Replace the devices that are out of order.*
The appliance does not switch on when hot water tap is opened, there is a spark discharge.	The stop gas valve by the inlet into the appliance is closed.	Open the stop gas valve by the inlet into the appliance.
	There is air in the gas pipelines.	See Note p. 3.2
	The electromagnetic valve is out of order or its connection contacts are disrupted.	Replace the electromagnetic valve or restore the contacts.*
	The spark does not get into the current of air-gas mixture of the burner	Adjust the distance of 5±0,5 mm between the end of the electrode of the plug and the burner's nozzle.*
	The LPG reserve in the cylinder has expired	Replace the LPG cylinder
Weak spark discharge	The power elements have discharged	Effectuate the power elements replacement
	Battery section contacts are oxygenized	Clean the battery section contacts.*
Temperature readings are not displayed on water temperature display	The water temperature display is not connected (the contacts are disrupted).	Connect the water temperature display (restore the contacts).*
	The water temperature display is out of order	Effectuate the water temperature display replacement.*
After switching the appliance on, water temperature is displayed for a short time, after that appear letters «EE».	Water temperature sensor is not connected (the contacts are disrupted)..	Connect the water temperature sensor (restore the contacts).*
	Water temperature sensor is out of order	Effectuate the water temperature sensor replacement.*

The lame of the main burner is weak, stretched, with yellow smoky tongues.	Dust deposit on the burner's nozzles and inner surfaces	Effectuate the burner's cleaning.*
After a short period of operation the appliance switches off.	Insufficient draught (the appliance is switched off by the automatic control system).	Close the hot water tap and at the next switching on(in 1-2 minutes) reduce the hot water temperature, reducing gas consumption or increasing water consumption
	The water unit membrane is damaged	Replace the water unit membrane.*
	The contact with the flame sensor is disrupted or the sensor's electrode touches the burner's details or is out of the flame zone (the burner operates for 7 seconds at continuing spark discharges and then switches off).	Restore the contact with the flame sensor, adjust its electrode's position.*
	Appearance of soot deposit on the flame sensor's electrode	Effectuate cleaning of the flame sensor from soot deposit*.
Insufficient water heating (the specified heating effect is not provided).	Dust deposit in the burner's channels, soot deposit on the heat exchanger's fins or scale deposit in the heat exchanger's pipes.	Effectuate cleaning of the burner and heat exchanger.*
	Low gas pressure.	Call the gas facilities service in order to eliminate the cause of low pressure.
	Water or gas unit is out of order.	Repair or replace the unit that is out of order.*
While the appliance is operating, increased noise of flowing water is noticed	Big water consumption.	Reduce water consumption.
	Skewed gaskets in the joints of the water tract	Replace the gaskets.*
	Water overheating in the heat exchanger.	Reduce gas supply or increase water consumption.
The burner's flame doesn't go out when the hot water tap is closed.	Jamming of the rod of the water or gas unit.	Close the gas stop valve by the appliance's inlet and call a specialized service organization for the appliance's repair.

*The works are effectuated by a specialized service organization.

10. GENERAL INSTRUCTIONS

10.1. Mounting of gas appliances for domestic use must be effectuated in accordance with the project for appliance's installation and the set of rules SP 62.13330.2011.

10.2. The appliance must be installed on fire-resistant walls (brick, concrete, with ceramic plating).

10.3. The appliance's installation and technical service must be done only by a specialized service organization. The appliance must be connected only to the gas category that is indicated in the user's manual and the table on the appliance

10.4. The installed appliance must be obligatory registered in the gas facilities service.

11. HANDING THE APPLIANCE OVER TO THE CUSTOMER

11.1. After installing the appliance, the installer must check its operation in the rated conditions. If it's necessary the appropriate adjustments should be performed for achieving the values indicated in the "User's manual"

11.2. After termination of mounting and adjusting works the consumer should be instructed about the order of using the appliance:

- rules of water quantity regulation;
- rules of gas quantity regulation;
- order of switching the appliance on and off;
- Appliance treatment works, effectuated by the customer.

The mark about the instruction must be made in the Certificate of the Installation and technical service. There should also be a mark about the appliance's installation.

12. TECHNICAL SERVICE

In order to ensure long-term and failure-free operation of the appliance and to keep its operating characteristics it is necessary to regularly make the examination, treatment and technical service.

In order to ensure fire safety it is necessary to carefully monitor cleanliness of the burners, not allow smoky flame during gas combustion, which causes soot deposit on the heat exchanger. At the same time the gaps between the heat exchanger's fins are covered with soot, and consequently the flame casts out of the combustion chamber, what may lead to fire.

Examination and treatment are performed by the owner of the appliance.

The appliance's technical service is performed by a specialized service organization not later than in 12 months after the appliance's installation and after that not less often than once in 12 months.

ATTENTION! The works connected with technical service are not the manufacturer company's warranty liabilities and are effectuated at the consumer's cost.

.

12.1. Examination

12.1.1. Every time before switching the appliance on it is necessary to:

- Make sure that there no flammable items close to the appliance;
- Make sure there is no smell of gas in the premise, in case of detecting the smell of gas in the premise it is necessary to call the gas facilities emergency service.

12.1.2. After the main burner's ignition it is necessary to visually check its operation: the flame must be blue, straight and without any yellow smoky edges which indicate the contamination of the inner channels of the burners' blades.

Contamination of the burner blades' inner channels causes incomplete gas combustion, what leads to the following phenomenon:

-Appearance of large amounts of the carbon monoxide (sweetdamp) which can cause poising;

-Appearance of large amounts of soot and its deposit on the heat exchanger which worsens heat exchange and may lead to the appliance's breakdown.

12.2. Treatment

12.2.1. The appliance should be kept clean, for this it is necessary to regularly remove dust from the appliance's upper surface, and also to wipe the casing at first with a wet rag, then by a dry one. In case of sustainable contamination, it is necessary to wipe the casing first with a wet rag moistened in a neutral detergent, and then with a dry one.

12.2.2. It is forbidden to use detergents of heightened effect and containing abrasive particles, gasoline or any other organic solvents for cleaning the surface of the casing and plastic parts.

ATTENTION! It is allowed to perform all operations for the appliance's treatment only after the appliance is switched off and has cooled down.

12.3. Technical service

During technical service the following operations are performed:

- Burner cleaning;
- Heat exchanger cleaning from soot and cleaning (washing) the pipes of the heat exchanger from scale deposit(if necessary);
- Sealings replacement in the water and gas systems;
- Testing water and gas systems on air-tightness;
- Checking the thermo relay's(draught sensor) operation;
- Lubricating the moving connections (if necessary);
- Special cleaning of the appliance (also from dust in the inner units and details).

ATTENTION! Operations concerning the appliance's technical service, connected with disassembling of its gas and water pipelines, must necessarily be performed after the appliance's complete switching off (the taps on the appliance's inlets on water and gas lines must be closed).

12.3.1. Burner cleaning

To clean the burner it is necessary to perform the following operations:

a) Switch the appliance off and close the gas stop valve;
b) remove the casing (see p.7.2.1), remove the burner and disconnect the manifold from it;
c) remove dust from the external surfaces of the burner and manifold by means of brush;
d) wipe the manifold and nozzles with a wet rag;
e) remove dust from inner channels of burner's blades by means of brush-cleaner;
f) clean the electrodes of the plug and flame sensor from soot deposit and clean its contacts
g) Wash the burner with soap solution, especially inner surfaces of its blades by means of a brush-cleaner, thoroughly wash it in running water, dry it and place back.

Keeping the burners clean will keep the heat exchanger from soot contamination and increase its working lifespan.

12.3.2. Heat exchanger cleaning

If the heat exchanger is contaminated, it is necessary to clean its surfaces where soot has appeared and the heat exchanger's pipes where scale deposit has appeared.

In order to remove soot it is necessary to:

a) Remove the heat exchanger and put it into cold soap solution or any other synthetic detergent;
b) Keep it in soap solution for 10-15 minutes and clean the contaminated surfaces by means of a soft brush, then wash it under a strong stream of water;
c) Repeat all the process if necessary.

In order to remove scale deposit it is necessary to:

a) Remove the heat exchanger and put it into a tank;
b) Prepare a 10% solution of citric acid(100 g of powder citric acid for 1 l of warm water);

c) Fill in the heat exchanger's pipeline with the prepared solution and leave it there for 10-15 minutes, then drain the solution and wash the pipeline thoroughly with water;
d) Repeat all the process if necessary.

12.3.3. Sealings replacement

During technical service when disassembling or assembly of water or gas pipelines is effectuated, it is necessary to obligatory install new sealings.

12.3.4. Checking of gas and water systems on air-tightness

After regular technical service when disassembling and assembly of water and gas pipes were performed it is necessary to check the appliance on air-tightness (see pp. 7.3.7 and 7.4.5).

12.3.5. Checking the thermo relay's (draught sensor's) working capacity

In order to check the thermo relay it is necessary to disconnect the flue pipe from the appliance, switch the appliance on and at rated working mode (with completely opened gas valve and rated water consumption) close the appliance's gas pipe with a metal sheet. The appliance should switch off within 2 minutes. If the thermo relay is out of order it must be replaced by removing it from the gas removal device (scheme 12, 14). Only a thermo relay provided by the company-manufacturer can be used for replacement. After replacing the thermo relay it is necessary to repeat the test.

After testing, connect the flue pipe to the appliance, ensuring the joint's air-tightness.

12.3.6. Unscheduled cleaning of the appliance

Cleaning of the appliance might be required more than once a year because of the intensive appliance's operation in the premises with much dust in the air. You can notice it visually by the burner's changed flame color. If the flame becomes yellow or smoky, it means that burner is contaminated with dust particles from the air and it is necessary to perform cleaning and technical sevice of the appliance. During burner's normal operation flame must have blue color.

It is necessary to perform an unscheduled cleaning of the appliance in case if in the premise where appliance is installed, some constructional or repairing works were made and lots of dust and construction waste got into the appliance.

ATTENTION! In case of dust accumulation in the inner units and details of the appliance there is a risk of its inflammation.

13. WORKS ORDER AT THE APPLIANCE'S REPAIR AND COMPONENTS REPLACEMENT

CAUTION! Operations for the appliance's repair, connected with disassembly of its gas and water pipelines, must necessarily be performed after the appliance's complete switching off (taps must be closed on the appliance's water and gas inlet lines). When you disassemble or assemble water or gas pipelines, it is recommended to mount new sealings. After replacement of the units and details it is necessary to make the assembly in reverse order.

Scheme of the appliance is represented on the schemes 18, 19, 20 page 35.

13.1. Casing removal

13.1.1. Remove knobs 10 by pulling them towards yourself.
13.1.2. Unscrew the panel fixation screw 9.
13.1.3. Disconnect the cables connecting the display 12 with the electronic control block and water temperature sensor.
13.1.4. Unscrew two self-threading screws on the bottom part of the appliance, connecting the casing 11 with the body frame carrier 1.
13.1.5. Pull the bottom part of the casing 11 towards yourself, put is up and remove from the appliance

13.2. Burner replacement

13.2.1 Remove the casing (see p. 13.1).
13.2.2. Disconnect the cables from the plug 18 and flame sensor 19.
13.2.3. Unscrew the captive nut of the burner's manifold 3.
13.2.4. Unscrew two screws from the burner's fastening 3 to the body frame's carriers 1 and remove the burner.
13.2.5. Install a new burner
13.2.6. Check the joints subject to the disassembling on air-tightness, on the operating water heater by soap solution bubble test (see p. **Ошибка! Источник ссылки не найден.**.7 and 7.4.5).
13.2.8. Check the new burner's operation on the working appliance

13.3. Heat exchanger replacement

13.3.1. Effectuate the works in accordance with the p. 13.2.1-13.2.5
13.3.2. Unscrew two self-threading screws of plank's fastening 14 to the gas removal device and remove it.
13.3.3. Unscrew two captive nuts from the heat exchanger's fittings 2 and remove it
13.3.4. Install a new heat exchanger.
13.3.6. Check the joints subject to disassembly on air-tightness on the operating appliance by soap solution bubble test for the gas and visual examination for the water (see pp. 7.3.7. and 7.4.5).

13.4. Water and gas unit replacement

13.5.1. Remove the casing (see p. 13.1).
13.5.2. Disconnect three cables from the electromagnetic valve 16.
13.5.3. Disconnect two cables from the micro switch 17.
13.5.4. Disconnect gas and water supply to the appliance.
13.5.5. Disconnect the adaptor 15 from the water and gas unit 4.
13.5.6. Unscrew four self-threading screws of the fastening of the water and gas unit's 4 to the body frame's bracket 1 and remove the water and gas unit.
13.5.7 Install a new water and gas unit
13.5.8. After installing and connecting the water and gas unit check gas and water connections on air-tightness. Water and gas leakages are unacceptable.
13.5.9. Check the appliance's operation with a new water and gas unit.

13.5. Water unit replacement

13.5.1. Remove the casing, see p. 13.1.
13.5.2. Disconnect water supply to the water and gas unit 4.
13.5.3. Disconnect the nut of the pipe 7 from the water unit 6.
13.5.4. Unscrew two screws fixing the water unit 6 to the water and gas unit's body frame.
13.5.5. Unscrew two screws fixing the water unit 6 to the body frame carrier 1 and remove it.
13.5.6. Install a new water unit.
13.5.7. Check the joints on air-tightness. Water leakage is unacceptable.
13.5.8. Check the appliance's operation with the new water unit.

13.6. Replacement of the pipe of cold water supply to the heat exchanger

13.6.1 Remove the casing, see p. 13.1.
13.6.2. Unscrew the captive nut 7 from the fitting of water unit 6.
13.6.3. Unscrew the captive nut from the fitting of the heat exchanger 2 and remove the pipe together with the gaskets 26 and 27.
13.6.4. Install a new pipe with new gaskets.

13.6.5. Check the appliance's operation. Water leakage is unacceptable.

13.7. Replacement of the pipe of hot water outlet from the heat exchanger.

13.7.1. Remove the casing, see p. 13.1.
13.7.2. Disconnect the cables and remove the thermo relay 22, unscrewing the loop screws 25.
13.7.3. Unscrew the hot water temperature sensor 30 together with the ring 31
13.7.4. Unscrew two screws fixing the fitting of the pipe 8 to the body frame carrier 1
13.7.5. Unscrew the nut of the pipe 8 from the fitting of the pipe of the heat exchanger 2 and remove the pipe.
13.7.6. Install a new pipe.
13.7.7. Check the appliance's operation. Water leakage is unacceptable.

. 13.8. Replacement of thermo relay (water overheating sensor)

13.8.1. Remove the casing, see p. 13.1
13.8.2. Disconnect two cables from the thermo relay 55 on the hot water outlet pipe 8.
13.8.3. Unscrew two self-threading screws of the thermo relay's fastening to the loop 25 and remove it.
13.8.4. Install a new thermo relay.
13.8.5. Check the appliance's operation with a new thermo relay.

13.9. Replacement of thermo relay (draught sensor)

13.9.1. Remove the casing, see p. 13.1.
13.9.2. Disconnect the cables from the thermo relay 22.
13.9.3. Remove the carrier 23 from the thermo relay 22 from the gas removal device, pushing up the lock on the carrier.
13.9.4. Unscrew two self-threading screws fixing the thermo relay 22 to the carrier 23 and remove the thermo relay.
13.9.5. Install a new thermo relay.
13.9.6. Check the appliance's working capacity with the new thermo relay.

13.10. Replacement of the plug or flame sensor

13.10.1. Remove the casing, see p. 13.1.
13.10.2.Disconnect the cables from the plug 18 or from the flame sensor 19.
13.10.3. Unscrew two self-threading screws fixing the plank 21 to the carrier 20, remove the plug 18 or the flame sensor 19.
13.10.4 Replace the plug or flame sensor.
13.10.5 Check the appliance's operation with a new plug or new flame sensor.

13.11 . Replacement of water temperature sensor

13.11.1. Remove the casing, see p. 13.1
13.11.2. Disconnect two cables from the temperature display 12.
13.11.3. Screw out the water temperature sensor 30 from the hot water outlet pipe fitting 8.
13.11.4. Install a new sensor.
13.11.5. Check the appliance's operation with a new sensor comparing the readings of water temperature on display and the readings of a thermometer when measuring the temperature of hot water by the appliance's outlet.

13.12 Replacement of the micro switch (water flow sensor)

13.12.1. Remove the casing, see p. 13.1.
13.12.2. Disconnect two cables from the micro switch 17.
13.12.3. Unscrew two screws of the micro switch fastening to the water and gas unit and remove it.
13.12.4. Install a new micro switch.
13.12.5. Check the appliance's operation with a new micro switch.

13.13 Battery section replacement

13.13.1. Remove the casing, see p. 13.1.
13.13.2. Disconnect two cables from the battery section 33.
13.13.3. Open the cover of the battery section 33.
13.13.4. Unscrew two self-threading screws of the battery section's fastening to the body frame's carrier 1 and remove it.
13.13.5. Install a new battery section.

13.14. Replacement of the water and gas unit's electromagnetic valve

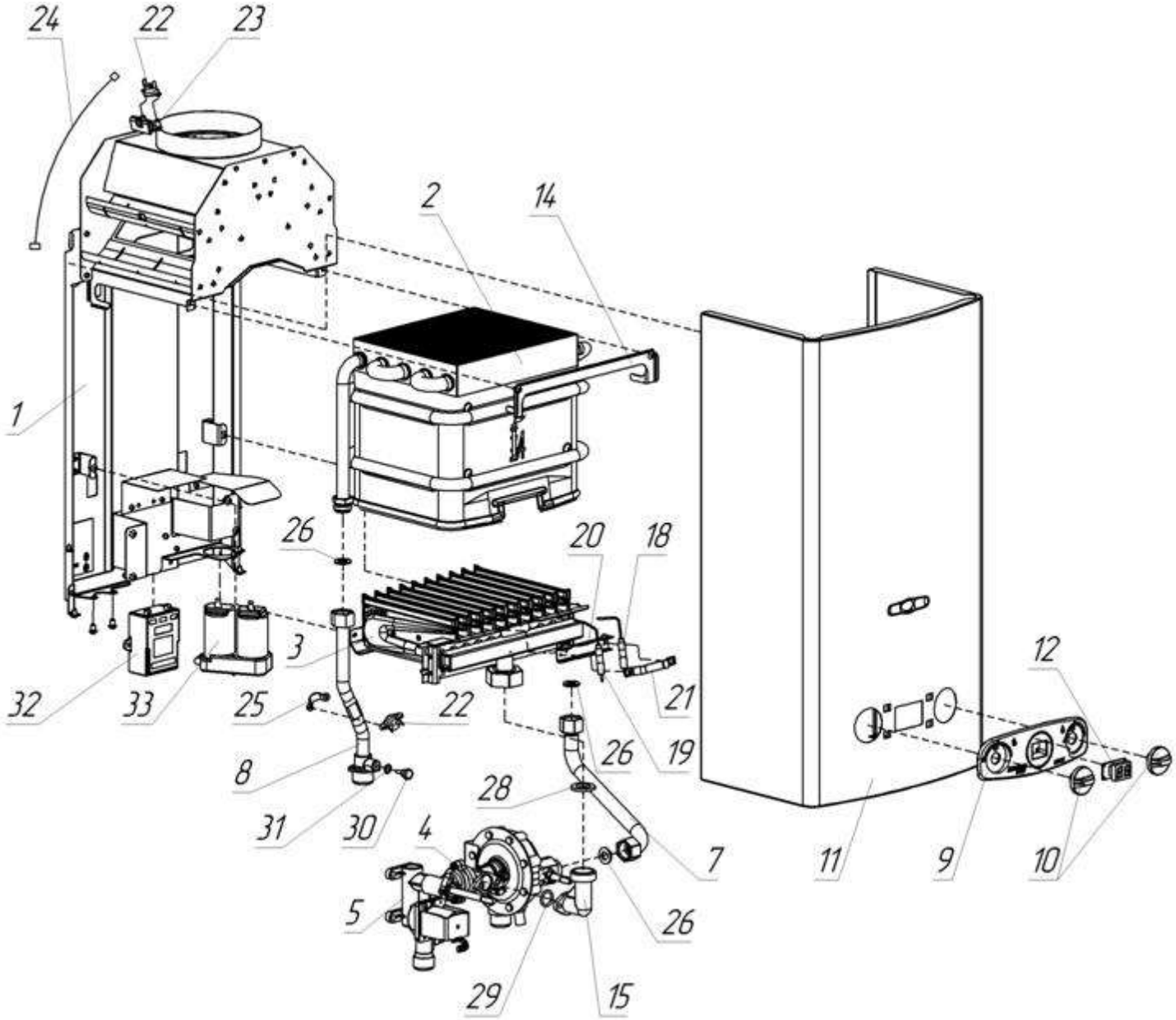
13.14.1. Remove the casing, see p 13.1.
13.14.2. Disconnect three cables from the electromagnetic valve 16 of the water and gas unit 4.
13.14.3. Unscrew two screws fixing the electromagnetic valve and remove it.
13.14.4. Install a new electromagnetic valve.
13.14.5. Check the appliance's working capacity with the new electromagnetic valve.

13.15. Replacement of the electronic control block

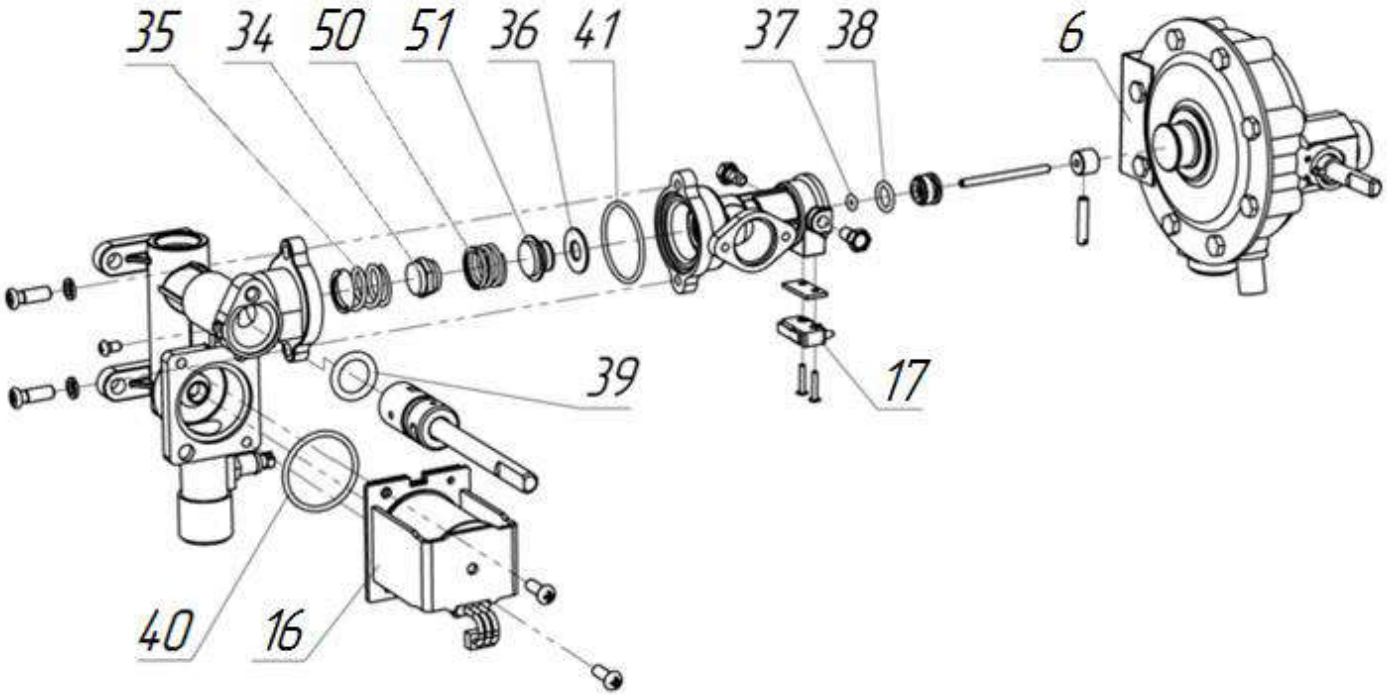
13.15.1. Remove the casing, see p 13.1.
13.15.2.Disconnect all external connecting cables and connectors of the electronic control block 32.
13.15.3. Unscrew two self-threading screws fixing the electronic control block 32 to the body frame's carrier 1 and remove it.
13.15.4. Install a new electronic control block.
13.15.5. Check the appliance's operation with the new electronic control block.

ANNEX I. scheme of the appliance with separated components

Scheme 18 View of the appliance with separated parts



Scheme 19. Components of the water and gas unit 3275-02.200



Scheme 20. Components of the water unit STG-W4P1

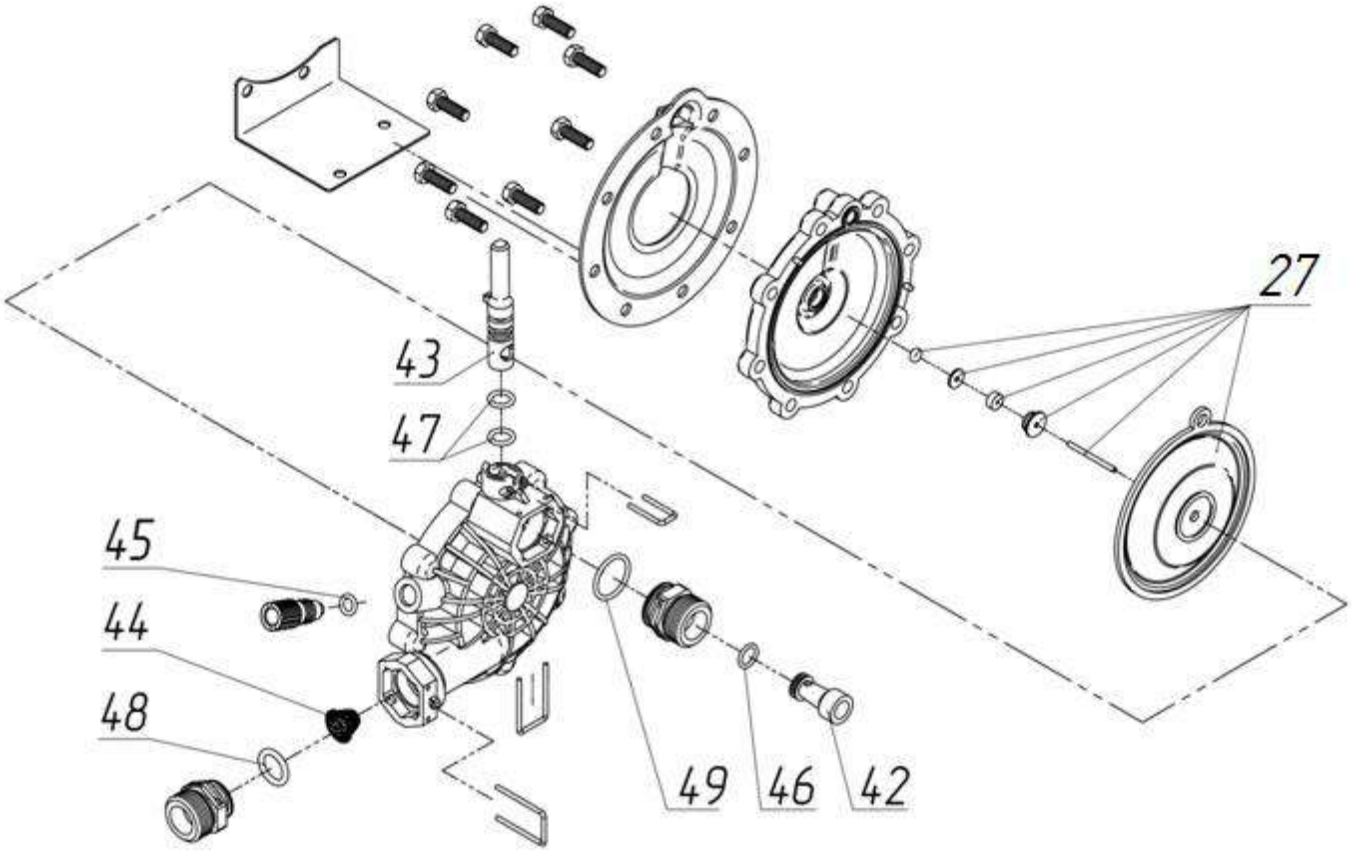


Table 8. Catalogue of the components of the appliance "BaltGaz NEVALUX-5611"

Pos.	Name	Designation
1	Body frame	3272-01.000
2	**Heat exchanger***	**3272-07.000**
3	**Burner*** (10 blades) NG (G20. 2nd family, group H). 1.3 kPa NG (G20. 2nd family, group H). 2.0 kPa LPG (G30. 3rd family, group B/P). 2.9 kPa	**3272-02.100** **3272-02.100-02** **3272-02.100-01**
4	**Water and gas unit***	**3275-02.200**
5	**Gas unit***	**3227-02.310**
6	**Water unit***	**STG-W4P1**
7	**Pipe** (from the water unit to the heat exchanger)'	**3275-04.000**
8	**Pipe** (hot water outlet)'	**3272-05.100-01**
9	**Panel ***	**3275-03.110**
10	**Knob***	**3275-00.006**
11	**Casing*** (white) or (white aluminum color)	**3275-03.001 или 3275-03.001-01**
12	**Display**	**3227-00.003**
13	**Burner's nozzle*** NG (G20. 2nd family, group H). 1.3 kPa NG (G20. 2nd family, group H). 2.0 kPa LPG (G30. 3rd family, group B/P). 2.9 kPa	**3295.07.20.5- 13** **3295.07.20.5- 10** **3295.07.20.5- 20**
14	Plank	3272-00.04
15	**Adaptor***	**3272-00.005**
16	**Electromagnetic valve***	**3227-02.290**
17	**Micro Switch*** (water flow sensor)	**3227-02.330**
18	**Plug***	**3227-02.130-01**
19	**Flame sensor***	**3227-02.140-01 или 3227-02.140**
20	Carrier	3272-02.001
21	Plank	3272-02.002
22	**Thermo relay***	**3222-15.000**
23	Carrier	3295.07.00.001
24	**Cable***	**3222-14.000-01**
25	**Loop***	**3222-00.025**
26	Gasket' (D19xd10x2)	**3103-00.014**
27	**Membrane with plate*** (repair packing of the water unit, is installed into the water unit)	**3224-22.00**
28	Gasket' (D28xd17x1.5)	**3219-00.07**
29	**Ring*** (d 15x2.5) or (d 15x2.65)	**3275-02.204** **3227-02.204-01**
30	**Water temperature sensor***	**3222-12.000-01**
31	**Ring*** d6xl.8	**3227-02.204-01**
32	**Electronic control block***	**3272-16.000**
33	**Battery section***	**3227-00.008**
34	hub	3275-02.002
35	Spring	3275-02.003
36	**Gasket***	**3275-02.004**
37	**Ring*** d2.8x 1.6 or d2.8x1.8	**3275-02.271** **3227-02.207**
38	**Ring *** d8.8x1.6 or d9x1.8 or 009-012-19-2-4 GOST 9833-73	**3275-02.273** **3227-02.202-02**
39	**Ring*** d12.5x2.65	**3227-02.204**
40	**Ring*** d27.5x2.65	**3227-02.204-02**
41	**Ring *** d29.5x1,8	**3227-02.207-05**
42	**Venturi fitting***	**3275-02.275**
43	**Water consumption regulator***	**3275-02.272**
44	**Filter***	**3275-02.276**
45	**Ring *** d7.8x2	**3275-02.277**
46	**Ring *** d11x1.5	**3275-02.278**
47	**Ring *** D11,4xd7.8	**3275-02.279**
48	**Ring *** d 16.5x2.2	**3275-02.281**
49	**Ring *** d20.5x1.8	**3275-02.282**
50	Spring	3251-00.C04
51	**Valve*** NG (G20. 2nd family, group H). 1.3 kPa NG (G20. 2nd family, group H). 2.0 kPa LPG (G30. 3rd family, group B/P). 2.9 kPa	**3275-02.001** **3275-02.001-02** **3275-02.001-01**

Telephone number of the unified technical support Service 8 800 555 40 35